

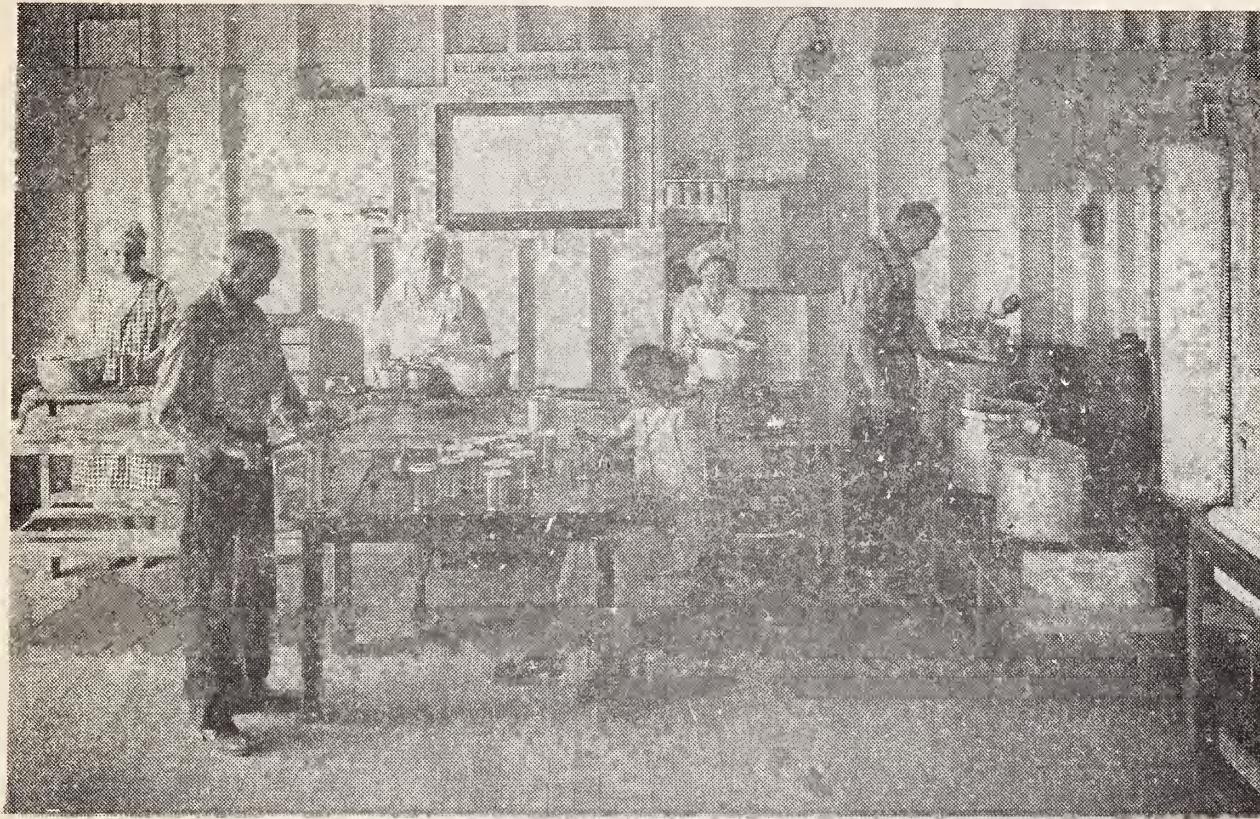
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Bureau of Home Economics  
Washington, D. C.



Canning Center, Clackamas County, Oregon

#### COMMUNITY CANNING CENTERS

By Mabel C. Stienbarger, Bureau of Home Economics, and  
Miriam Birdseye, Office of Cooperative Extension Work  
U. S. Department of Agriculture

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CANNING CENTERS are organized for several purposes. Sometimes they are intended solely for demonstration of methods and equipment for home canning. Often they are the result of a neighborhood arrangement for joint use of the same canning equipment at a saving of time and fuel. Most numerous at present, however, are centers which have been organized to further the "live-at-home" program in rural communities under leadership of State extension workers, and centers which are operated as relief projects, providing employment as well as food.

As relief programs gathered headway in 1933, community canning under the direction of extension workers became a major relief activity for women. A number of State-wide cooperative garden and canning programs were carried on in 1933 between relief administrations and State extension services, and in the fall and winter meat canning succeeded the canning of vegetables and fruits. Cooperative State-wide programs for 1934 are more numerous and more ambitious than for 1933, and as the rural rehabilitation program for needy farm families supersedes Civil Works Administration activities on a country-wide scale and home and community gardens are stressed for farm and city dwellers, we may expect a large increase in both home and community canning.

The largest relief canning enterprise to date was undertaken in Texas, where the State relief administration, the Federal Surplus Relief Corporation, and the State extension service equipped and operated 19 beef canning centers employing workers on Civil Works Administration funds. The project covered about 6 weeks, during which the canning plants, planned and directed by the local home demonstration agents, and supervised by ex-agents assisted by experienced women, ran 24 hours a day, on 4- or 6-hour shifts. They put up 21,320 beeves purchased from Texas farmers by experienced buyers, with a total output of 3,673,592 cans, No. 2 size. This enterprise had as objectives not only the purchase of surplus beeves, the employment of needy people, and the providing of a quantity of food for distribution; it also aimed to teach an army of Texas citizens how meat should be cut up and canned for home consumption, with emphasis on proper equipment and sanitary precautions.

Thus the canning center becomes a center for educational work. It makes canning equipment available for those unable to own it. It provides opportunity for the less experienced to can under supervision. Often it provides facilities for drying and pickling as well as canning. And where conducted for relief purposes, utilizing the surplus products from farms and from subsistence or community gardens, it reduces the demands upon county, State, and Federal relief funds.

THE SET-UP for the canning center varies with the locality. Under a neighborhood cooperative arrangement, families often pool the equipment which they individually own, each family canning its own food materials. In other places the county owns equipment which is moved from place to place as needed, for use under supervision of the home demonstration agent or of leaders trained by her. Some counties have traveling canning kitchens, consisting of retorts and a boiler mounted on a chassis and sent around with a trained worker in charge.

More common, however, is the center with stationary equipment. A building may be especially designed and erected at small cost, but more often space in existing buildings has been fitted up for the purpose. A few centers have been set up in connection with home demonstration markets, or at cooperative creameries, and some in home economics laboratories in schools, with the home economics teacher in charge. Another possibility is to secure the loan of a local canning plant which normally cans a single product during a limited season, or to enlarge the staff and equipment of local plants to process the products of home or community gardens at a flat rate per can.

THE FINANCING of the canning center must, of course, be arranged before any plans can be put into operation. Housing the activities, purchase and installation of equipment and provision for repairs, containers for the food, and the salary of a trained supervisor are the first and usually the most serious problems encountered.

Frequently, however, canning equipment and containers have been furnished by planters, mill owners, factory managers, banks, county appropriating bodies, school boards, civic organizations, the American Red Cross, or by State or county relief administrations. Some recent relief programs furnish labor, building materials, essential canning equipment and containers, provided local agencies furnish the site, and water, light, heat, and minor equipment.

In return for use of the center or containers, a proportion of the products canned, or a certain amount of labor, is often required of the persons who put up foods for their own use. In this way many centers have stored up a large stock of canned goods for distribution to the needy, or for sale. Sometimes cooperative groups are organized under direction of the Federal Emergency Relief Administration and furnished with canning equipment in order that the surplus from subsistence gardens may be preserved. The products canned are for the use of members of the group and are not to be merchandized.

The cost of containers is much less for dried or pickled products than for canning. Corn, pumpkin, squash, nearly matured peas and beans, as well as many fruits, can be successfully dried. Cabbage, turnips, and string beans, as well as cucumbers, can be brined or "krauted". (See Farmers' Bulletins 984, "Farm and home drying of fruits and vegetables," and 1438, "Making fermented pickles"; also publications by State agricultural colleges on drying and brining fruits and vegetables.)

### MANAGEMENT OF THE CENTER

COMPETENT SUPERVISION is absolutely essential to the success of a canning center. Where untrained persons are assembled to work with perishable foods, and to use unfamiliar equipment, there is certain to be waste of material and time, and possibly menace to health, without expert guidance and control. This is especially true where nonacid vegetables and meats are canned. The county home demonstration agent, the local home economics teacher, or some other local person trained in home economics, or experienced in commercial canning should be consulted or made responsible for planning, equipping, and operating the center, and should be asked to train, or to approve the appointment of suitable persons to oversee the canning.

THE MANAGER directs all work, keeps records, and labels or supervises the labeling of containers. At least one responsible person must watch and record the processing of the filled cans. Men are needed for firing, heavy lifting, tightening the clamps on retorts, and turning the hand sealer.

For small centers, the home demonstration agent frequently trains, and in any case approves the selection of experienced women to work in teams on a volunteer basis on specified days; or she approves and supervises experienced workers who are paid from relief funds.

Larger centers require a regular staff, including a cannery manager approved by the home demonstration agent and paid in cash.

DAILY RECORDS are needed, whatever the type of center. They will differ, of course, according to the center's requirements, but the following are suggested as generally useful:

Kitchen appointment blank, by communities and/or families.

Family canning record shows date center was used by each family, number of members using, hours spent, and products prepared, classified according to

Product: kind; owned or furnished.

Containers: glass, number and size; tin, number and size, owned or furnished; processing method used; number containers taken home; number left for center.

Production record (wall size) shows dates, number of persons using the center, kind of products prepared (fruits, vegetables), total number containers of each; number glass and tin containers used, respectively; number of containers taken home by workers; number left for center.

Cost records of products, supplies, containers, and other equipment purchased for the use of the center and of needed repairs; also of time spent by manager and by paid or volunteer assistants.

RELIEF CENTERS should keep additional records, including data such as will probably be collected by the employment or welfare agencies and turned over to the manager of the center. Such records should include a -

Registration file showing name, community, and post office address of persons on relief rolls served by the center, with any desired information on family make-up. There should be space on the back of this card or on a separate card for estimating the family canning budget and recording the total number of containers needed, empty containers at home, and additional containers needed.

IN RETURN for the use of equipment, cans and/or labor, families who bring their own produce to the center for canning are usually charged a toll in the form of a percentage of their finished product - canned vegetables, fruits, or meats. The toll this year under the Texas cooperative plan for community canning, on the basis of experience in 1933, is given on the opposite page in Table 1.

NOTICES POSTED in appropriate places at the canning center have been found to save time and misunderstanding. The following, in large print, are suggested:

Schedule for center: working days; hours; days assigned to each community.

State sanitary regulations for canning plants.

Directions for operating cookers.

Time-tables for processing.

Rules for care of equipment.

Rules for cleaning and care of waste.

Sample canning budget.

Statement of toll to be levied for use of equipment.

Improvised bulletin board for special notices and assignments.

#### PLANNING SPACE FOR WORK AND EQUIPMENT

The canning center serves a vital need, but its purpose has usually been more or less temporary. The object is to conserve food, utilize spare hands or provide employment, and save money under present conditions, rather than to conduct a permanent enterprise for profit. The probable life of the project should be considered in planning and equipping the center.

Accordingly, while some canning centers occupy buildings especially designed for the purpose, in most cases existing rooms, sheds, or other structures are adapted. Certain steps, like washing products, heating water, and processing, may even be carried on out of doors. On the other hand, some of the larger centers occupy buildings formerly used as creameries, laundries, or factories of some kind, easily fitted up for canning purposes. Every center is in fact an individual problem.

Table 1.- Suggested toll for canning in cooperation with relief agencies

	Relief receive	Producer receive	Owner of equipment receive
With relief furnishing:			
a. equipment			
b. cans	Vegetables 55%	Vegetables 45%	
c. labor	Meats 40%	Meats 60%	
Producer furnishing:			
a. products			
With relief furnishing:			
a. equipment			
b. cans	Vegetables 45%	Vegetables 55%	
Producer furnishing:			
a. products	Meats 30%	Meats 70%	
b. labor			
With relief furnishing:			
a. equipment			
Producer furnishing:			
a. cans	Vegetables 15%	Vegetables 85%	
b. products	Meats 20%	Meats 80%	
c. labor			
With relief furnishing:			
a. equipment			
b. labor	Vegetables 35%	Vegetables 65%	
Producer furnishing:			
a. cans	Meats 30%	Meats 70%	
b. products			
With relief furnishing:			
a. cans			
b. labor			
Producer furnishing:			
a. products	Vegetables 45%	Vegetables 45%	Vegetables 10%
Equipment individually owned	Meats 30%	Meats 60%	Meats 10%
With relief furnishing:			
a. cans			
Producer furnishing:			
a. equipment	Vegetables 30%	Vegetables 70%	
b. labor	Meats 20%	Meats 80%	
c. products			

1/ Texas Relief Administration and Texas Agricultural and Mechanical College cooperating, 1934.

ESSENTIAL for every center are plenty of pure water, thorough screening, good lighting, ventilation, sanitation, proper disposal of waste water and garbage. Conditions should determine, however, whether it is wiser to provide several cookers of household size, and other equipment which can later be used in the home, or to set up hotel or factory-size retorts and other large-scale equipment, which have greater capacity but may fall into disuse when the emergency passes. While equipment must be suitable and safe, ingenuity and local craftsmanship can sometimes produce effective and inexpensive substitutes for commercial devices.

SANITATION.- Sanitary toilet and hand-washing facilities and space for wraps must also be provided, and other pertinent requirements of the State Sanitary Code must be met.

OPERATIONS for which even the smallest canning center should make provision are the following:

Receiving and checking products to be canned.  
Keeping records.  
Removing and disposing of husks, stems, and other gross waste.  
Washing products to be canned.  
Washington glass jars, tin cans, cooking equipment, utensils, towels.  
Heating water.  
Grading and preparing products, disposing of waste.  
Sterilizing glass jars, if open-kettle method is used.  
Scalding or precooking products to be canned.  
Marking tin and glass containers before processing.  
Filling products into containers.  
Sealing (for tin cans).  
Processing in pressure cooker (nonacid products); in water bath (fruits and tomatoes).  
Cooling tin cans in running water, if possible; glass jars in air out of draft.  
Cleaning and labeling finished products.  
Storing - supplies, equipment, finished products.  
Cleaning up, inside and outside.

WORKING SURFACES with the following measurements are recommended:

Height for standing work, 34 to 36 inches.  
Height for sitting work, 27 to 28 inches.  
Knee room, 6 to 8 inches.  
Height of tables may be easily adjusted with wooden blocks.

ARRANGE EQUIPMENT to save steps and avoid cross-travel. Plenty of water, and generous heating surface and work space pay for themselves by expediting the canning process and saving fatigue.

FOR ILLUSTRATION of possible cannery set-up and suggested arrangement of equipment under given conditions, see figures 1, 2, 3, and 4. Examples of cannery center types in operation last year are the relief center in Clackamas County, Ore. (cover page), where families canned their own produce; a community center operated by a home demonstration club of Negro

women in Anderson County, Texas (fig. 5); and the canning kitchen at Durham, N. C. (figs. 6, 7) which put up the products of a 60-acre relief garden for the city in addition to the total canning budget for the county poor farm, using relief labor.

#### EQUIPMENT

FUEL of many sorts is used, of course, to furnish the heat for canning operations. Wood, coal, kerosene, gas, or electricity are found most economical or convenient, according to local resources.

STEAM under low pressure, where available, proves a great convenience. Some canning centers are located in buildings previously occupied by other activities which required a boiler for generating steam under low pressure. Other centers have set up a steam boiler or been able to pipe steam in from nearby sources.

Steam may be used to provide hot water for general purposes. It may be used for heating water baths and pressure cookers during processing. Figure 2 illustrates some installations that may be made with steam.

THE ITEMS of equipment desirable for canning centers of different size and capacity are suggested in table 2 on page 8. This list is quoted almost entire from a report of the Illinois Extension Service on canning centers planned for handling the products of good sized community gardens. A few modifications have been made. For an 8-hour day, the capacity of the pressure cookers is figured at 10 loads per day.

In small centers, where a variety of products must be handled on the same day from a number of home gardens, several small cookers ranging in size from 18 to 30 quarts in capacity permit a more flexible schedule and save time and heavy lifting.

Additional suggestions for equipment of the center are metal covering and rollers for tables, floor truck or wheel cart, ovens, brooms, mops, soap, cleansing powders. Where retorts of large-capacity pressure cookers are used, time may be saved by having twice as many retort baskets as retorts, and also a crane, or portable derrick, for lifting the filled baskets into and out of the retorts. (See fig. 7.)

STEAM PRESSURE COOKERS, called retorts in the larger sizes, are needed for processing meats and nonacid vegetables, which include all vegetables, except tomatoes and tomato mixtures, rhubarb, and ripe pimientos. The 18- to 30-quart sizes of pressure cookers are suitable for both household use and canning centers. Cookers larger than this are too heavy for a woman to lift, and will necessitate the assistance of a man unless they can be left stationary. (For cooker dimensions and capacities see table 3, page 9.)

Follow directions of the manufacturers regarding operation and care of the pressure cookers, and post the instructions for the benefit of the workers.

Table 2.- Number of workers and items of equipment required for canning centers of different capacities 1/

Item	Two 40-qt. steam pressure cookers	Four 40-qt. steam pressure cookers, or 1 retort and 2 cookers	Six 40-qt. steam pressure cookers, or 2 retorts
Number of workers <sup>2/</sup>	7	10 to 14	15 to 20
Capacity, 8-hour day <sup>2/</sup>	250 No. 2 cans	500 No. 2 cans	750 No. 2 cans
Equipment necessary:			
Stoves	4 to 6 burners	6 to 8 burners	8 to 10 burners
Sinks	2	2	2
Table space	4, each	approximately 4 x 10 inches	
Tin can sealers	1, hand	2 hand or 1 electric	
Buckets	2	3	4
Tubs for cooling	1 or 2 small	3	4, or large tank
Shallow pans (6 qt. or larger)	6	6 to 10	10 to 15
Dish pans	2	2 or more	2 or more
Kettles, for heating water	1 (2-3 gal.)	1 (4-5 gal.)	1 (5-10 gal.) or automatic heater
Kettles, for precooking	2 (12 qt.)	3 (12 qt.)	4 (12 qt.)
Wire baskets, colanders	2	2	2
Funnels, can fillers	2	2 or more	2 or more
Ladles or dippers, hook on handle	3	4	5
Can lifters, tongs	2 pair	4 pair	6 pair
Measuring cups	1 (1 cup)	2 (1 cup)	2 (1 cup)
	1 (1 qt.)	2 (1 qt.)	2 (1 qt.)
Paring knives	4 or more	6 to 8	10
Long-knives (heavy)	2	2	2
Forks	2	2	2
Tablespoons	2	4	6
Long-handled spoons	2 (1 wooden)	3 (1 wooden)	4 (1 wooden)
Teaspoons	2	4	6
Brushes for vegetables and cleaning	3 each	6 each	8 each
Scissors (to cut beans)	2	4	6
Thermometer	1	1	1
Dish towels	4 daily	6 daily	8 daily
Hand towels <sup>3/</sup>	1 for each worker daily		
Wash basins	2	4	6
Pot holders or gloves	6	10	15
Scales	1	1	1
First-aid equipment	1	1	1
Garbage containers			
Clock			

1/ Adapted from Illinois Extension Service.

2/ Approximate.

3/ Paper towels may be better.

Table 3.4 Steam pressure cooker (or retort) dimensions and capacities (approximate)

Size	Diameter	Height	Net Weight	No. 2 tins	No. 3 tins	Pint jars	Quart jars
Quart	Inches	Inches	Pounds				
10	9-1/2	12	12	6	2	5	3
18	12	14	18	14	8	8	5
25	13	15	27	16	10	18	7
30	14	15	35	19	12	20	8
40	15	15	50	25	16		
90	18	18	140	48	30		

The gauges on pressure cookers are quite likely to get out of order. They should be tested at the beginning of the canning season, and frequently thereafter. If a reliable master gauge is available, the test can be made by removing the petcock, or safety valve. Screw in the master gauge and run up the pressure while comparing the two gauges. It is not necessary that the air should be exhausted from the cooker for this test. If an error of 1 or 2 pounds is found, an allowance can be made for it in processing. If the error is as much as 3 pounds, the gauge should be replaced by a new one. Such repair parts can be obtained from the manufacturer. A past of glycerine and litharge, such as plumbers use, may be put over the threads before screwing in any attachment on the pressure cooker top. This will make the closure steam-tight.

Another method of testing the gauge on a pressure cooker is by use of a maximum thermometer of suitable range (100°-300°F.). Place the thermometer in a container that will hold it in an upright position in the cooker. Run the pressure up to the lowest point that will be required, in canning usually 10 pounds. Return the pressure to zero, open the cooker, observe the thermometer, shake down the mercury, and start again. Run the pressure up 5 pounds higher, to 15 pounds, and again observe the thermometer. Gauges sometimes show an error of about 1 pound at 10 and 2 pounds at 15.

Pressures and corresponding temperatures are as follows:

5 pounds pressure,	227° F.
10 "	239°
15 "	249°

WATER BATHS, or boiling vats, of many types are in use for processing the acid foods - fruits, tomatoes, rhubarb, and ripe pimientos. These vats must be deep enough to permit covering the food containers with at least an inch of water. After filling, the glass jars or tin cans are placed on a rack in the bath with space between for circulation of water. Tin cans may be placed in two or more layers. Cover the vats with lids to hold in steam. (See fig. 3 for suggestions for improvised boiling vats.) Commercial water-bath cookers are also obtainable in a variety of sizes.

GLASS JARS.-- Examine carefully and test seals (except self-sealing type) before using. Use only good quality, tested, new jar rubbers.

Glass jar sizes (average):

Quart, 3-5/8 inches diameter; 7 inches height  
Pint, 3-3/8 " " 5-1/2 " "

Use glass jars for products such as pickled beets, which are covered with a liquid essentially vinegar. Rhubarb, which corrodes tin, should be packed in glass. Strawberries are preferably packed in glass, but they fade in any container.

TIN CANS.-- Buy only first-grade tin cans. Difficulties in obtaining tight seals have been reported in a number of cases where cans of second grade were used. Lots of 1,000 or more are cheaper than smaller lots. At least one State relief administration in 1933 secured a contract price on all tin cans purchased for relief canning.

Table 4.- Common sizes of standard cans for fruits and vegetables

Can size	Dimensions (inches)	Average net weight of contents	Contents (cupfuls)
No. 1	2-11/16 x 4	11 oz.	1-1/3
No. 1 tall	3-1/16 x 4-11/16	16 "	2
No. 2	3-7/16 x 4-9/16	20 "	2-1/2
No. 2-1/2	4-1/16 x 4-11/16	28 "	3-1/2
No. 3	4-4/16 x 4-14/16	33 "	4
No. 5	5-2/16 x 5-10/16	3 lbs. 8 "	7
No. 10	6-3/16 x 7	6 " 10 "	13

The usual sizes of cans for home use are No. 2, No. 2-1/2, and No. 3.

For most foods, there are advantages in using tin at the canning center. The initial cost is less. Heat penetration is better, hence the processing period is generally shorter and more containers can be processed in a given time. No loss of liquid occurs in processing with tin cans, as may occur with glass jars. Tin cans may be water-cooled, hence there is less danger of over-cooking. And tin cans are easier to handle and transport.

ENAMELED CANS are needed for certain products, to preserve the color. They are of two kinds: sanitary enamel, which is bright gold in color, and C enamel, which is dull gold. Red-colored fruits and beets are put up in sanitary enameled cans. So are pumpkin and squash, to prevent corrosion. Corn and succotash are canned in C enamel. But acid foods should never be put in C enamel cans. (See Bureau of Home Economics mimeographed sheet 449, "Uses of enameled tin cans".)

A SEALING MACHINE, hand or mechanical, is needed for tin cans, and for cans which are used a second time attachments for opening and reflanging are needed. With these attachments, however, the sealing machine is more expensive than if made for sealing only. Cans may be used a second time only if they are entirely free from discoloration or corrosion.

Care is needed in adjusting sealing machines. Test them by sealing a can or two filled with water, and observe for leakage. The top of the can should be turned in even folds over the side and pressed down against it.

Give the operation of sealers over to one or two persons who become familiar with it.

PROCESSING TIME-TABLES from a reliable source should be posted over the cookers. Farmers' Bulletin 1471, "Canning Fruits and vegetables at home," prepared in the U. S. Bureau of Home Economics, may be obtained for 5 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D. C. Also, directions may usually be obtained from the county home demonstration agent or the State agricultural college. Directions for canning meats may be obtained on request to the Bureau of Home Economics.

#### YIELD OF CANNED PRODUCTS

The yield of canned products from given quantities of raw fruits, vegetables, or meats will vary with conditions of product and with differences in method or practice. Approximately, however, the yield of canned fruits and vegetables from specified quantities of raw material should be as given below in table 5.

Table 5.— Approximate yield of fruits and vegetables when canned

Fruit or vegetable	Quantity raw	Yield
Apples .....	2-1/2 pounds	1 No. 3 can (quart)
Berries .....	1-1/4 to 1-1/2 "	"
Cherries .....	1-1/4 to 1-1/2 "	"
Peaches .....	2 to 2-1/2 "	"
Pears .....	2 to 2-1/2 "	"
Plums .....	1-1/2 to 2 "	"
Tomatoes .....	2-1/2 to 3-1/2 "	"
Asparagus, whole .....	3 "	"
Beans, shelled lima ....	2 "	"
Beans, snap .....	1-1/2 "	"
Beets, baby .....	2-1/2 to 3 "	"
Corn .....	4 to 6 ears	1 No. 2 can
Greens .....	1 pound	"
Peas, green .....	4 "	1 No. 3 can
Pumpkin .....	4 "	"
Sweetpotatoes .....	2-1/2 to 3 "	"

#### POINTS IN THE CANNING PROCESS

FOODS FOR CANNING should be of good quality in every respect, and should be canned as soon as possible after they are gathered. They should be delivered to the canning center early in the day, and in quantities not too large to be taken care of on that day. When foods are held in a warm place, micro-organisms may increase to such an extent that the usual canning processes are inadequate, and spoilage is certain. This has been the cause of numerous failures in community work. If any foods must be held over, separate

them into small lots and place in a cool, well-ventilated room, or much better, in a refrigerator.

GRADE the fruits and vegetables as to size and degree of ripeness, in order to obtain uniform products. Since the nonacid vegetables are more difficult to sterilize, they should be canned when small and tender.

WASH FOODS thoroughly to remove all traces of soil. If galvanized iron utensils are used, do not allow acid foods or foods with cut surfaces to remain in them, because enough zinc may thus be taken up to make the material poisonous.

WASH TIN CANS before using, but keep the lids dry. For open-kettle canning sterilize glass jars in boiling water before filling. For water-bath or pressure processing, have the jars clean and hot, but not necessarily sterile.

PREHEATING the food that is to be canned accomplishes several purposes. It drives out air from tissues and causes the shrinkage usually necessary to obtain a good pack in canning. Removal of air from the tissues also influences the keeping qualities and helps to preserve flavor and color. The processing time is shortened by preheating, and adequate processing is more likely to be obtained, especially in those foods which are thick or viscous and therefore are slowly penetrated by heat.

Preheating is generally done by cooking the food a short time before placing it in the jars or cans; or it may be done by "exhausting" the cans after they are filled. In the latter case, after hot liquid is poured over the food in the cans, they are placed in a bath of hot or boiling water which comes to within about 1 inch of the tops of the cans. (No liquid need be added to meat that is heated in this manner). The bath is covered to retain the steam. The time required to drive out air and give an internal temperature suitable for sealing the cans ( $170^{\circ}$ - $185^{\circ}$ F., or steaming hot) varies with the product; e.g., 10 to 20 minutes for some fruits and 40 to 60 minutes for meats. This method can be used to special advantage for fruits which break badly during precooking, namely, berries, cherries, currants, and grapefruit.

WHEN FILLING the cans or jars, leave headspace of  $1/2$  to  $1/4$  inch (for tomato juice none). Use a sufficient proportion of liquid to solid to prevent a dense pack.

SEAL FULLY precooked foods packed in glass jars for water-bath processing, but not quite fully for pressure processing. Foods packed in glass jars without precooking should not be fully sealed for any processing. Foods canned in tins must be heated by precooking or exhausting before the cans are sealed, and must be sealed before processing.

Seal while the headspace is filled with steam. Thus a partial vacuum is formed when the material cools.

TO AVOID loss of liquid with glass jars used in a pressure cooker, do not quite complete the seal before processing. The adjustment varies with different kinds of jars. Keep the pressure as constant as possible during processing. Allow the pressure gauge to reach zero before opening the petcock, then open it very gradually so there is no sudden out-rush of steam. Complete seals on the jars at once. If liquid has been lost do not open the jars to add more, as this will necessitate re-processing.

COOL glass jars in air. Set the jars apart from each other, but keep them out of drafts. Jars of automatic or self-sealing type need special protection from drafts after pressure processing. Cool tin cans in running water, or in water frequently changed.

LABEL all canned foods with name of owner, kind of product, variety, and date. Glass jars may be marked with a glass pencil, or with gummed labels. Tin cans may be marked with rubber stamps, India ink, or canners' ink, which stands hot water. Use rubber cement to fix paper labels on tin, or if the paper labels are long enough, place glue along one end, wrap smoothly around the cans, and lap the glued end over the other. Labels may be purchased in quantity from jobbing houses or printed to order. (See attached list of manufacturers).

STORE the canned foods when well cooled, in a cool, dry place. Protection from light is necessary for foods in glass containers.

#### CANNING BUDGETS

For community canning, even more than for home canning, it is useful to draw up canning budgets. This means beginning with a fruit and vegetable budget, showing the amounts a family of given size should consume in a year. Of these requirements, the amount of food to be canned will depend upon how much is used fresh, how much is available for storing fresh, and how much is to be dried or brined. It will depend also upon the length of the growing season, for the canning budget should provide only for the period when fresh fruits and vegetables are out of reach. Many food preservation budgets provide also for canned and cured meats.

Naturally no one budget pattern will fit all localities, and the Extension Services of the various State agricultural colleges have drawn up budget plans based on conditions in their own States. Each canning center should secure these recommendations from the county home demonstration agent or the State Extension Service, and post them in a conspicuous place. The manager should help families unfamiliar with the budget to work out their own budget plans.

In recent years home demonstration clubs and other community groups have made and carried out canning budgets for hot lunches in local schools.

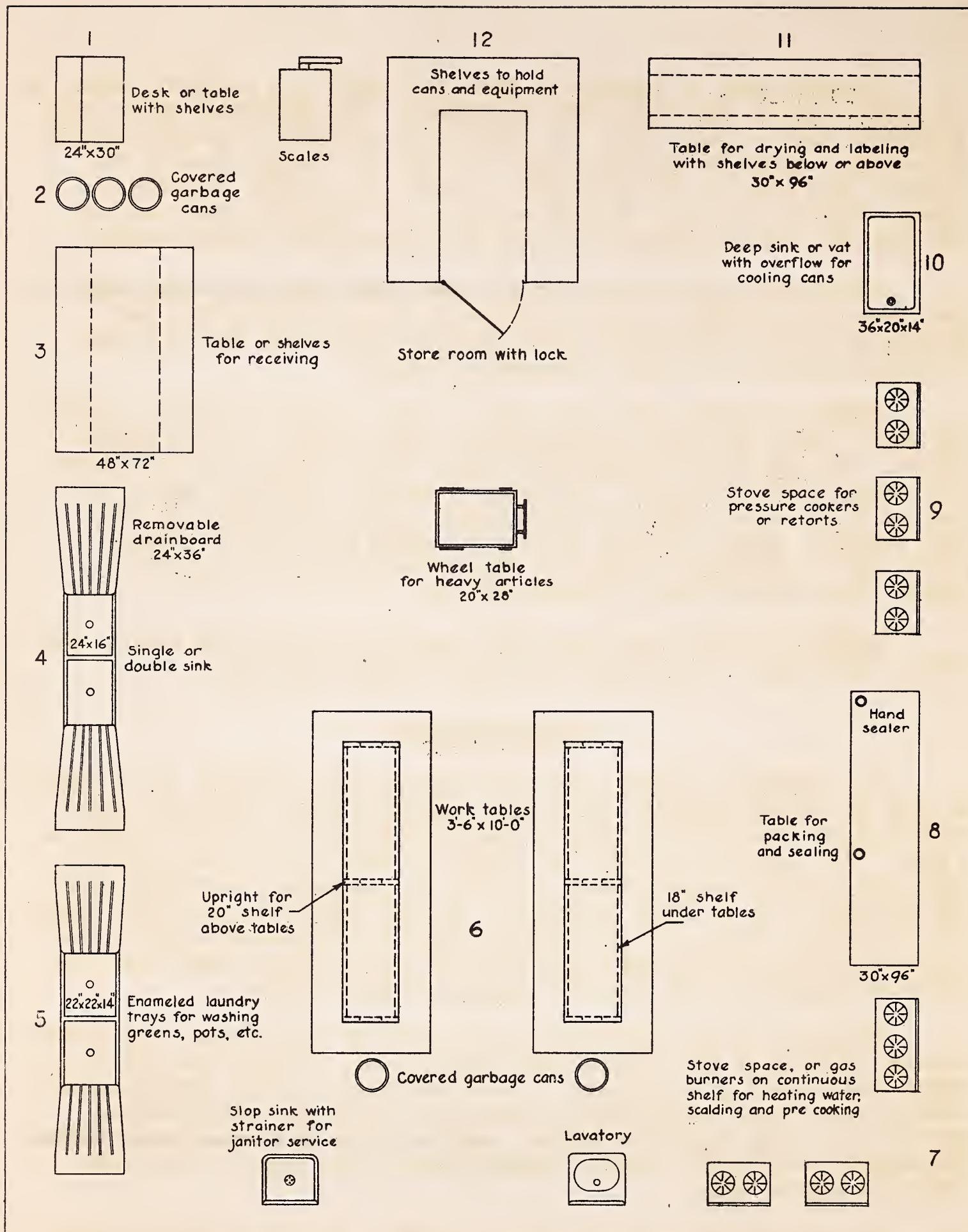
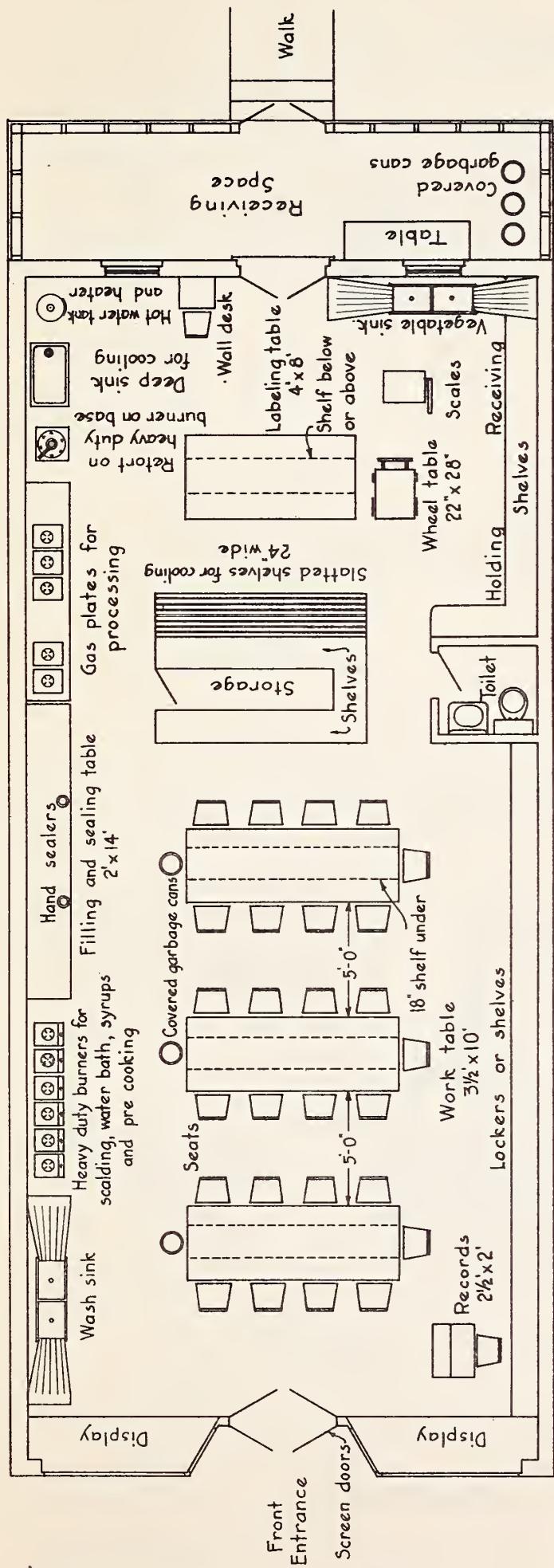


FIG. 1: DIAGRAM OF EQUIPMENT DESIRABLE FOR CANNING CENTER ARRANGED IN CONVENIENT ORDER FOR CANNING OPERATIONS



If porch is not screened then doors and windows onto porch must be screened

HEIGHT OF WORKING SURFACES  
Standing to be 34" to 36"  
Sitting to be 28".

## SUGGESTIONS FOR LOW PRESSURE STEAM

FIG. 2. SUGGESTED LAYOUT FOR COMMUNITY CANNING CENTER IN A 24 FEET BY 65 FEET STORE BUILDING WITH GAS INSTALLATION

COAL OR OIL STOVES MAY BE SUBSTITUTED OR STEAM UNDER LOW PRESSURE

BUREAU OF AGRICULTURAL ENGINEERING  
DRAWING NO. 2738

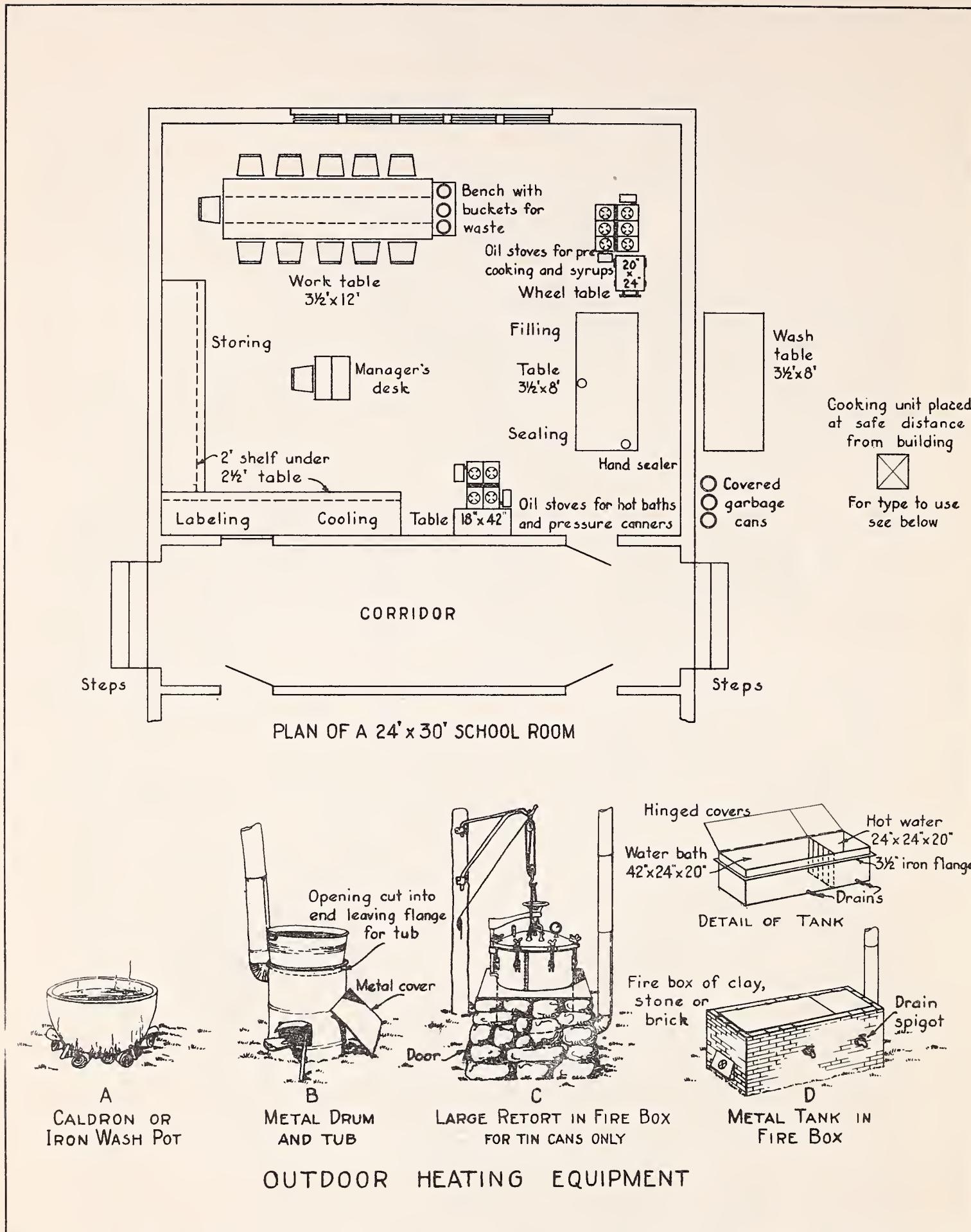


FIG. 3. LAYOUT FOR COMMUNITY CANNING CENTER IN A SCHOOLROOM WITH SUGGESTIONS FOR IMPROVISED OUTDOOR EQUIPMENT

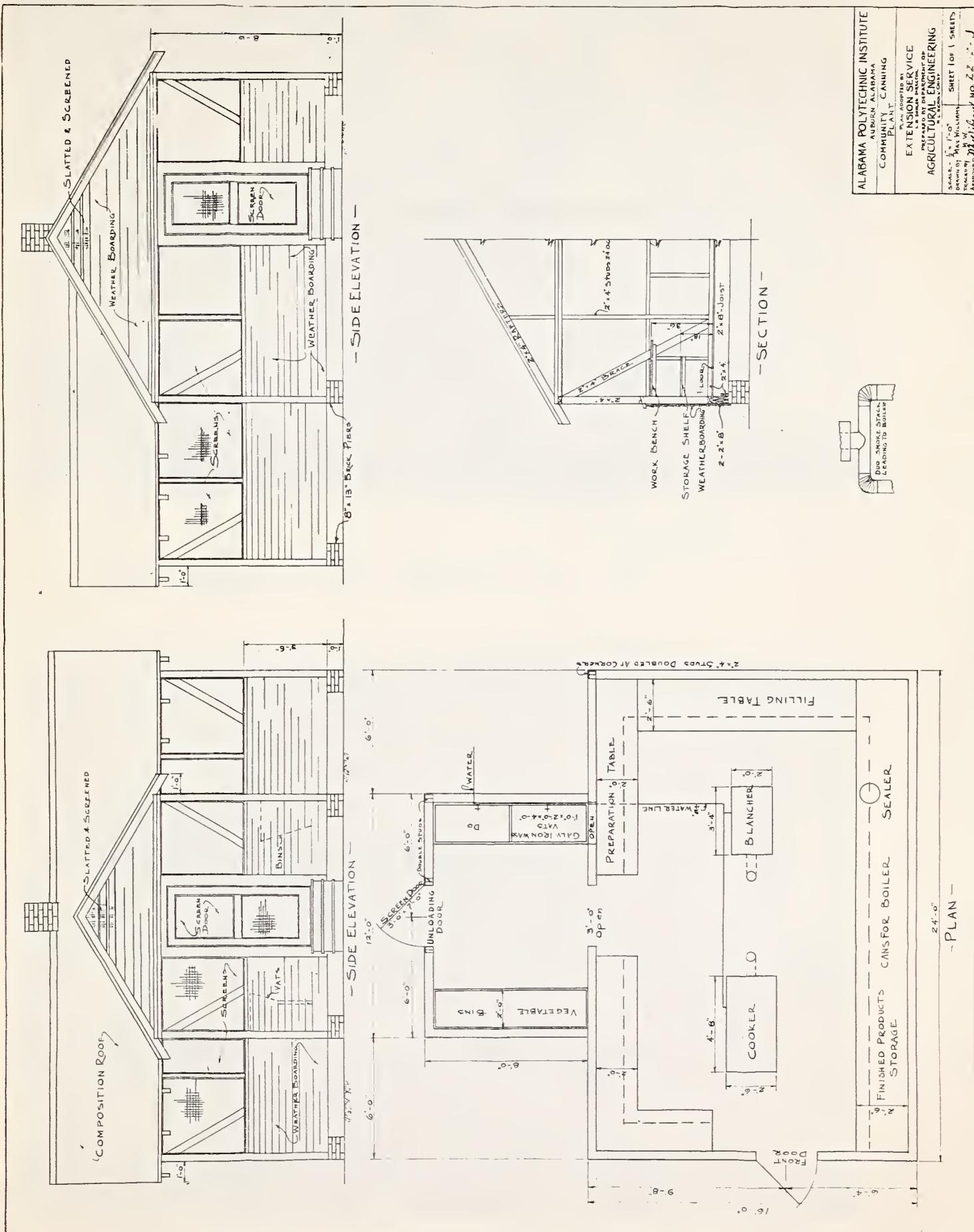


FIG. 4. ELEVATIONS AND FLOOR PLAN FOR A SMALL COMMUNITY CANNING PLANT IN A SEPARATE BUILDING. (ALABAMA EXTENSION SERVICE.)



Fig. 5. Home demonstration club of Negro women at work in their canning center, Anderson County, Texas

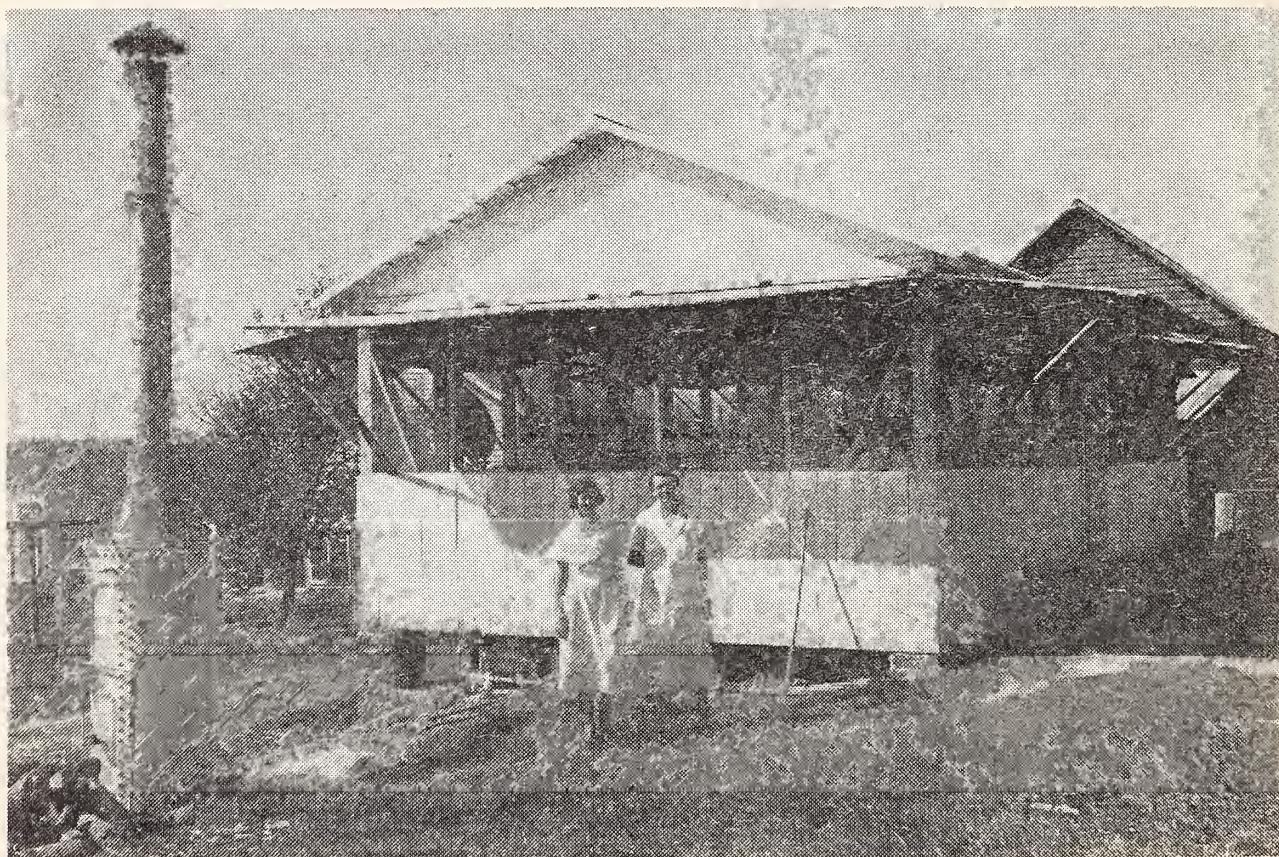


Fig. 6. Community canning kitchen at Durham, North Carolina  
(See floor plan, opposite page)

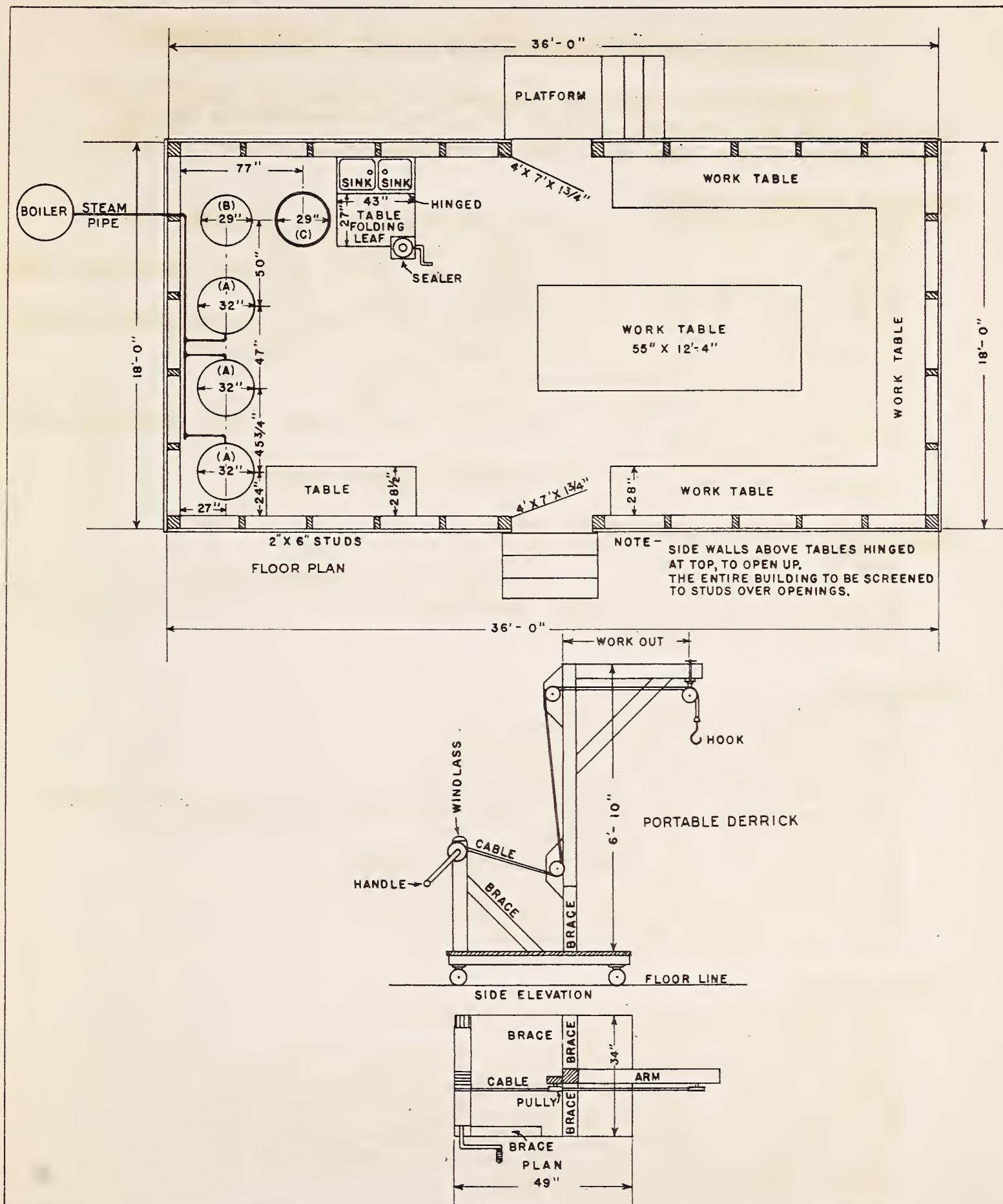


FIG. 7. FLOOR PLAN OF COMMUNITY CANNING KITCHEN AT DURHAM, N. C.,  
WITH PORTABLE DERRICK FOR USE IN CANNERY  
(A) WATER BATH COOKERS; (B) RETORT; (C) STEAM JACKET KETTLE

### A PARTIAL LIST OF MANUFACTURERS OF HOME CANNING EQUIPMENT

In giving these names, no guarantee is implied nor should it be inferred that the products of these firms are recommended in any way over those of other firms which may be manufacturing canning equipment.

#### PRESSURE COOKERS (STEAM)

Automatic Canning Devices, Inc., 549 Randolph St., Chicago, Ill.  
Burpee Can Sealer Co., 215 W. Huron St., Chicago, Ill.  
Columbia Canning Machinery & Supply Co., 505 N. 29th St., Portland, Oreg.  
Denver Metals Foundry, 1739 Blake St., Denver, Colo.  
Dixie Canner, Co., Inc., Little Rock, Ark. (household and larger retorts)  
Halftime Cooker Co., Inc., 7556 Oglesby Ave., Chicago, Ill.  
National Aluminum Manufacturing Co., Peoria, Ill.  
National Pressure Cooker Co., Eau Claire, Wis.  
Sprague-Sells Corp., 308 W. Washington St., Chicago, Ill. (household and larger retorts)  
The Pressure Cooker Co., 338 Broadway, Denver, Colo.

#### WATER BATHS, RACKS, JAR HOLDERS, ETC.

Hamblin & Russell Mfg. Co., Inc., Worcester, Mass.  
Kerr Wire Products Co., 319 N. Whipple St., Chicago, Ill.  
Rochester Can Co., 109 Hague, Rochester, N. Y.  
Stahl Mfg. Co., Quincy, Ill.

#### GLASS JARS

Ball Bros. Co., Muncie, Ind.  
Capstan Glass Co., Connellsville, Pa.  
Foster-Forbes Glass Co., Marion, Ind.  
Hazel-Atlas Glass Co., Wheeling, W. Va.  
Illinois-Pacific Glass Corp., 15th and Folsom, San Francisco, Calif.  
A. H. Kerr and Co., Sand Springs, Okla.  
Latchford Glass Co., Huntington Park, Calif.  
Owens-Illinois Glass Co., Toledo, Ohio.  
Peerless Glass Co., Long Island City, N. Y.  
Salem Glass Works, West Salem, N. J.

#### RUBBER RINGS

Acme Rubber Manufacturing Co., Trenton, N. J.  
Ball Bros. Co., Muncie, Ind.  
Boston Woven Hose and Rubber Co., Cambridge, Mass.  
Canfield Rubber Co., 129 Garden St., Bridgeport, Conn.  
S. Cupples Co., 7th and W. Corner Spruce, St. Louis, Mo.  
B. F. Goodrich Rubber Co., Goodrich Station, Akron, Ohio.  
United States Rubber Co., 2 Market St., Passaic, N. J.  
Western Rubber Co., Goshen, Ind.

#### CAPS FOR GLASS JARS AND BOTTLES

American Can Co., New York Central Bldg., New York City.  
Anchor Cap and Closure Corp., 22 Queens St., Long Island City, N. Y.  
(Metal caps and sealing equipment for glass containers).  
Ball Bros. Co., Muncie, Ind.  
Bernardin Bottle Cap Co., Evansville, Ind.  
Capstan Glass Co., Connellsville, Pa.

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Ball Bros. Co., Muncie, Ind.  
Bernardin Bottle Cap Co., Evansville, Ind.  
Capstan Glass Co., Connellsville, Pa.  
Manor Metalcraft Corp., Columbia, Pa.  
Phoenix-Hermetic Co., 2444 W. 16th St., Chicago, Ill.  
Real Seal Cap Co., 2419 W. 14th St., Chicago, Ill.  
White Cap Co., Inc., 1369 N. Branch St., Chicago, Ill.

TIN CANS

Acme Can Co., Ltd., 1717 N. Main St., Los Angeles, Calif.  
American Can Co., 104 S. Michigan Ave., Chicago, Ill.  
(Will not send catalogue)  
Atlas Can Co., 241 Wythe Ave., Brooklyn, N.Y.  
Buffalo Can Co., Inc., 240 Clinton St., Buffalo, N.Y.  
Central Can Co., Inc., 4527 W. Lake St., Chicago, Ill.  
Continental Can Co., Inc., 100 E. 42nd St., New York City.  
Dixie Canner Co., Inc., Little Rock, Ark.  
Eagle Can Co., 290 Commercial St., Boston, Mass.  
Gordon Can Co., Omaha, Nebr.  
R. Hardesty Mfg. Co., 31st & Blake, Denver, Colo.  
Independent Can Co., Howard and Ostend Sts., Baltimore, Md.  
Metal Package Corp., 110 E. 42nd St., New York City.  
Fred L. Myers Co., Inc., Lewes, Del.  
National Can Co., 71 Locust St., Boston, Mass.  
Phillips Can Co., Cambridge, Md.  
Western Can Co., 17th and Rhode Island Sts., San Francisco, Calif.

SEALERS FOR TIN CANS

Automatic Canning Devices, Inc., 549 Randolph St., Chicago, Ill.  
Burpee Can Sealer Co., 215 W. Huron St., Chicago, Ill.  
Northwestern Iron & Steel Co., Eau Claire, Wis.  
Montgomery Ward & Co., Chicago, Ill.

JELLY GLASSES

Ball Bros. Co., Muncie, Ind.  
Capstan Glass Co., Connellsville, Pa.  
Hazel-Atlas Glass Co., Box 175, Wheeling, W. Va.  
A. H. Kerr and Co., Sand Springs, Okla.  
Monongah Glass Co., Fairmont, W. Va.  
Salem Glass Works, West Salem, N. J.

CANNERS LABELS

Colorprint Label Co., 125 S. 8th St., St. Louis, Mo.  
Dixie Canner Co., Inc., Little Rock, Ark.  
Fuller Label & Box Co., 444 Dargan, Pittsburgh, Pa.  
Higgins & Gollmar, Inc., 38 Ferry St., New York, N. Y.  
Kalamazoo Label Co., 200 Ransom St., Kalamazoo, Mich.  
R. J. Kittredge & Co., 812 W. Superior, Chicago, Ill.  
Maryland Color Printing Co., Holliday & Hillen, Baltimore, Md.  
United States Printing & Lithograph Co., 2 Beech St., Cincinnati, Ohio,  
also, 20 Cross St., Baltimore, Md.

